

IDAHO DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

FEDERAL AID IN FISH RESTORATION

Job Performance Report

Project F-71-R-10



REGIONAL FISHERIES MANAGEMENT INVESTIGATIONS

Job No. 2-a. Region 2 Mountain Lakes Investigations
Job No. 2-b. Region 2 Lowland Lakes Investigations
Job No. 2-c. Region 2 Stream Investigations
Job No. 2-d. Region 2 Technical Guidance

by

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JOB PERFORMANCE REPORT

State of: Idaho

Name: REGIONAL FISHERY MANAGEMENT
INVESTIGATIONS

Project No.: F-71-R-10

Title: Region 2 Mountain Lakes
Investigations

Job No.: 2-a

Period Covered: July 1, 1985 to June 30, 1986

ABSTRACT

Idaho Department of Fish and Game personnel collected basic survey information on 17 mountain lakes within Region 2 during 1985. Hook and line fish samples were collected from all of the lakes except one, which was found to be too shallow to support fish. Information collected included: condition and size range of fish present, spawning potential in inlets or outlets, shoreline cover and relative angler use.

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OBJECTIVES

1. To evaluate the success of fish releases in the mountain lakes in Region 2.
2. To monitor angler success, satisfaction and relative use of the mountain lakes within the region.
3. To collect baseline data on spawning potential, lake morphology, species composition and population densities.

RECOMMENDATIONS

Continue to collect baseline data on Region 2 mountain lakes that includes lake morphology, spawning potential, species composition, return to the creel and angler satisfaction. This information will be used to evaluate the success of the fish stocking program lake by lake. The data can best be collected by conservation officers investigating lakes in their patrol district.

Support the proposed Nez Perce National Forest mountain lake survey for the Seaway Bitterroot Wilderness that is planned for 1986.

TECHNIQUES USED

Department personnel, primarily conservation officers, traveled to 17 mountain lakes within the region during 1985. They checked the lakes for natural production, assessed spawning potential, noted size and species of fish in the lakes and interviewed anglers for catch, effort and satisfaction. We also had numerous volunteer reports of fishing experiences at various lakes which provided data on catch, effort, species and size composition.

Lake Surveys

Elizabeth Lake

Elizabeth Lake is located in the Elizabeth Creek drainage on the North Fork of the Clearwater River. The lake has been stocked with various strains of cutthroat trout on an approximate three-year rotation, except in 1980 when it was stocked with rainbow. It was last stocked in 1985 with 1,000 westslope cutthroat fry. The August 18, 1985 survey revealed high densities of both rainbow and cutthroat. The rainbow were mostly in the 300 mm category, but were in poor condition with large heads and slender bodies. Cutthroat were 150 to 200 mm and in better condition. Angler use was rated as light.

Bald Mountain Lake

Bald Mountain Lake drains into Fro Creek, which enters the Weitas Creek drainage on the North Fork of the Clearwater River. The lake was last stocked with cutthroat in 1974 and has been stocked twice with grayling in 1971 and again in 1982. There is no record of stocking with rainbow; however, there is apparently some natural reproduction of both rainbow and cutthroat.

The August 8, 1985 survey revealed medium densities of 150 to 225 mm rainbow in good condition. There was no indication that the grayling plant had been successful. Angler use was rated as heavy with easy access from the Lolo Motorway.

Kid Lake

Kid Lake is located in the headwaters of Kid Lake Creek on the Middle Fork of Kelly Creek in the North Fork Clearwater River drainage. The lake was last stocked with cutthroat in 1974 and with rainbow-cutthroat hybrids in 1981. It was also stocked with grayling in 1971 and again in 1982. The July 5, 1985 survey revealed low densities of large (300 to 480 mm) cutthroat and RB x CT hybrids. Reports from 1974 indicated that the 1971 grayling release was successful with 300 to 350 mm grayling present. However, no grayling from the 1982 release were seen in 1985. There is some spawning gravel present in the outlet and several 300 to 480 mm cutthroat were observed spawning during the July 5 survey. Angler use is rated as very heavy with an estimated 50 anglers using the lake over the July 4 weekend. A high percentage of these anglers were from Montana.

Leo Lake

Leo Lake is located at the headwaters of the Middle Fork of Kelly Creek. The lake has been stocked with various strains of cutthroat and RB x CT hybrids on an approximate three-year rotation. It was stocked with 2,000 westslope cutthroat fry in 1985. The July 5, 1985 survey revealed a medium density of cutthroat and a low density of rainbow. The fish averaged 230 mm, with a few 300 to 400 mm. There is no record of rainbow having been stocked, but they are present. There is spawning gravel available in the inlet, and the rainbow that were checked had recently spawned. Angler use is rated as moderate with most of the pressure coming from Montana anglers.

Emerald Lake

Emerald Lake is located in the headwaters of Brushy Fork Creek, which is in the Bear Creek drainage on the Selway River. The lake has been stocked with both cutthroat and rainbow over the years. The last stocking was with 916 westslope cutthroat fry in 1985. The August 17, 1985 survey revealed a high density of 280 to 350 mm cutthroat and low densities of 280 to 380 mm rainbow and RB x CT hybrids. The lake has no potential spawning areas. Angler use is rated as light, although there were fire rings present.

Bills Lake

Bills Lake is located in the headwaters of Brushy Fork Creek, which is in the Bear Creek drainage on the Selway River. The lake has been stocked mainly with cutthroat, with one release of RB x CT hybrids in 1980. The last stocking was comprised of 916 westslope cutthroat in 1985. The August 17, 1985 survey revealed a medium density of 230 to 380 mm cutthroat. The lake has no potential spawning areas. Angler use is, very light.

Three Lakes Creek Lake #5

Three Lakes Creek Lake #5 is located at the headwaters of Three Lakes Creek near Salmon Mountain in the Selway River drainage. The lake has been stocked mainly with cutthroat, except in 1981 when RB x CT hybrids were used. It was last stocked in 1983 with Henrys Lake cutthroat. The July 21, 1985 survey revealed a low density of cutthroat trout ranging from 75 to 350 mm. There is some spawning gravel in the outlet. Angler use is rated as light.

Mallard Lake

Mallard Lake is located at the headwaters of Heather Creek on upper Skull Creek in the North Fork Clearwater drainage. The lake has been stocked only with cutthroat on an approximate three-year rotation basis, with the last release being 1,000 westslope cutthroat in 1985. The August 16, 1985 survey revealed a low density of 300 mm cutthroat. No spawning habitat is present. Angler use is rated as moderate to heavy, with heaviest use occurring during hunting season.

Jug Lake

Jug Lake is located at the headwaters of Jug Creek in the Isabella Creek drainage on the North Fork of the Clearwater. The August 17, 1985 survey revealed the lake to be too shallow to support fish. There were "lots of frogs" present.

Upper Knob Lake

Upper Knob Lake is located at the headwaters of Gospel Creek in the Johns Creek drainage of the South Fork Clearwater River. The lake has been stocked with rainbow trout on a three-year rotation. The August 29, 1985 survey revealed a low density of 260 mm rainbow. Angler use is rated as light.

Middle Knob Lake

Middle Knob Lake is located at the headwaters of Gospel Creek in the Johns Creek drainage of the South Fork Clearwater River. Over the years, the lake has been stocked with rainbow, cutthroat and RB x CT hybrids.

The most recent stocking was with 636 Henrys Lake cutthroat in 1983. The August 29, 1985 survey revealed a medium density of 260 mm cutthroat. There is limited spawning habitat in the inlet. Angler use is rated as light.

Lower Knob Lake

Lower Knob Lake is located at the headwaters of Gospel Creek in the Johns Creek drainage of the South Fork Clearwater River. The lake has been stocked with both rainbow and cutthroat, with the most recent stocking being 402 rainbow trout in 1983. There is no available spawning areas. The August 29, 1985 survey revealed no fish. Angler use is rated as light.

He-Devil Lake

He-Devil Lake is located at the headwaters of the Middle Fork of Little Granite Creek in the Granite Creek drainage of the Snake River. Over the years, the lake has been stocked mostly with cutthroat, but in 1981 rainbow were stocked. It was most recently stocked with westslope cutthroat in 1984. The July 31, 1985 survey revealed a low density of 260 to 300 mm rainbow in good condition. The lake has no spawning habitat. Angler use is rated as moderate.

Baldy Lake

Baldy Lake is located at the headwaters of the South Fork of Little Granite Creek in the Granite Creek drainage of the Snake River. The lake was stocked with cutthroat trout for years, but since 1976 it has been stocked only with rainbow. The most recent stocking of rainbow was in 1984. The August 1, 1985 survey revealed a low density of 200 to 260 mm rainbow and one 460 mm RB x CT hybrid. There is limited spawning potential in the inlet. Angler use is rated as moderate.

Basin Lake

Basin Lake is located at the headwaters of the west Fork of Sheep Creek in the Sheep Creek drainage of the Snake River. Over the years, the lake has been stocked mostly with cutthroat except in 1981 when rainbow were stocked. The most recent stocking was with westslope cutthroat in 1984. There is no record of stocking with RB x CT hybrids. The July 31, 1985 survey revealed high densities of 300 to 350 mm RB x CT hybrids and 280 to 350 mm rainbow and a medium density of 200 mm cutthroat. There is no spawning habitat available in the lake. Angler use was rated as heavy.

Saddle Creek Lake

Saddle Creek Lake is located at the headwaters of Saddle Creek in the Sabe Creek drainage of the Salmon River. The lake has been stocked on a three-year rotation with both rainbow and cutthroat trout. The most

recent stocking was with rainbow and cutthroat in 1984. The 1978 and 1981 stockings were rainbow only. The July 4, 1985 survey revealed a high density of rainbow trout and a low density of cutthroat trout. The rainbow ranged from 150 to 380 mm, while cutthroat were about 150 mm. There is no spawning habitat available in the lake. Angler use is rated as moderate.

Upper Lake Creek Lake

Upper Lake Creek Lake is one of the three lakes in a chain located at the headwaters of Lake Creek in the Bargamin Creek drainage of the Salmon River. The lake has been stocked with various strains of cutthroat over the years, but was stocked with rainbow in 1981. The most recent stocking was with westslope cutthroat in 1984. The July 4, 1985 survey showed a medium density of 300 to 380 mm rainbow; no cutthroat were caught or observed. There is no spawning habitat available in the lake. Angler use was rated as light.

Fish Lake (Cedars)

Department personnel checked 34 cutthroat trout from angler creels at Fish Lake (Cedars) during 1985. They ranged from 170 to 325 mm and averaged 274 mm. Table 1 provides a length-frequency of cutthroat trout measured from angler creels or caught by Department personnel at Fish Lake for each year since 1973.

Table 1. Percent of cutthroat trout by 20 mm size groups taken from Fish Lake (Cedars Area), 1973 to 1985.

Length (mm)	1973	1974	1975	1976	1977	1978	197	1980	1981	1982	1983	198	1985
130-149	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
150-169	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
170-189	4.1	0.6	ND	2.2	ND	ND	ND	2.9	ND	0.6	ND	ND	2.9
190-209	4.6	2.6	0.4	ND	1.6	ND	1.5	3.2	0.5	ND	ND	ND	2.9
210-229	5.2	6.5	2.8	2.2	4.1	NO	1.5	2.9	1.8	ND	1.4	ND	11.8
230-249	12.8	8.3	9.3	6.8	5.0	3.4	1.5	7.0	4-.4	2.4	10.1	ND	11.8
250-269	14.0	7.7	6.9	4.5	8.3	4.6	10.8	10.2	12.0	7.1	13.0	16.1	8.8
270-289	27.3	25.8	14.3	13.6	15.7	12.6	12.3	16.0	20.9	17.8	21.7	25.8	14.7
290-309	18.6	33.6	31.5	34.1	23.1	32.2	27.7	25.1	27.4	46.1	36.2	45.2	20.6
310-329	6.4	18.7	27.8	20.4	24.0	27.6	36.9	21.8	27.7	20.1	15.9	12.9	26.5
330-349	2.3	7.2	6.5	15.9	16.5	17.2	4.6	9.0	4.7	5.9	1.7	ND	NQ
350-369	0.6	ND	0.5	ND	1.7	2.4	3.2	0.6	0.5	ND	ND	ND	ND
Total number of cutthroat measured	172	155	216	44	121	87	65	412	383	169	69	31	34

JOB PERFORMANCE REPORT

State of: Idaho

Name: REGIONAL FISHERY MANAGEMENT
INVESTIGATIONS

Project No.: E-71-R-10

Title: Region 2 Lowland Lakes
Investigations

Job No.: 2-b

Period Covered: July 1, 1985 to June 30, 1986

ABSTRACT

Creel checks on Region 2 lowland lakes during 1985 revealed catch rates ranging from 1.71 fish/hr at Moose Creek Reservoir down to 0.56 fish/hr at Winchester Lake. The overall average catch rate for all lowland lakes in Region 2 was 0.83 fish/hr. Hatchery rainbow contributed over 90% of the catch at all lowland lakes except Dworshak Reservoir (51%). Idaho residents comprised over 85% of anglers checked at Region 2 lakes during 1985.

Manns Lake was drained and became available for restocking with both warm water and cold-water species. Department personnel used an electrofishing boat to collect over 1,000 largemouth bass at Spring Valley Reservoir, which were transported and released into Manns Lake. Spokane-stock rainbow were released into Manns Lake to test growth and contribution to the creel of a trout species.

An intensive limnological survey was done on Winchester Lake that revealed many symptoms of severe eutrophy. Mean total phosphate concentrations in the euphotic zone were six times the recommended limits for reservoirs. The mean chlorophyll a concentration was 6 to 12 times that considered representative of eutrophic conditions.

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OBJECTIVES

1. To obtain key biological, physical and chemical data on lowland lakes in Region 2 to provide baseline information for species and stock management programs.
2. To assess performance and contribution of existing trout stocks to angler creels and angler satisfaction.

RECOMMENDATIONS

1. Stocking rates of catchable trout needs to be evaluated in all Region 2 lowland lakes using criteria developed in Region 1 so that:
 - a. objectives of the fish plan are met,
 - b. return to the creel of catchables is optimized, and
 - c. the program is cost effective.
2. Creel surveys, gillnetting, seining and electrofishing needs to be continued to evaluate contribution to the creel, relative survival and growth for:
 - a. fingerling releases of Spokane-strain rainbow into Manns Lake and Soldiers Meadow Reservoir,
 - b. fingerling releases of Kamloops into Elk Creek, Moose Creek, Spring Valley reservoirs and Waha Lake,
 - c. releases of largemouth bass and crappie into Manns Lake,
 - d. releases of smallmouth bass into Elk Creek Reservoir, and
 - e. Kamloops releases into the Lewiston Levee ponds.
3. Explore corrective solutions to the water quality problem in Winchester. An evaluation of suggested alternatives from the water quality report should be reviewed by University personnel.

TECHNIQUES USED

Routine Creel Census

All the lowland lakes within Region 2 were stocked periodically between April and July and again in October with catchable rainbow (Table 1). Conservation officers routinely collected creel data that included species composition, catch per effort and angler residency information throughout the fishing season. Considerable effort was put on the ice fishing season at Spring Valley Reservoir by a University of Idaho graduate student that studied the reservoir during 1985.

Table 1. Summary of fish releases in lowland lakes and ponds of Region 2, 1985.

Water	Date stocked	Species stocked	Number stocked	Pounds stocked	Fish per, pound
Winchester Lake	4/22	R1	15,080	5,800	2.6
	5/22	R1	4,960	1,600	3.1
	10/21	R1	2,520	900	2.8
	10/22	R1	<u>2,520</u>	<u>900</u>	<u>2.8</u>
	Catchable subtotal		25,080	9,200	2.7
Spring Valley Res.	4/22	R1	10,836	4,515	2.4
	4/22	R1	4,160	1,600	2.6
	5/22	R1	4,960	1,600	3.1
	7/15	R4	5,800	2,000	2.9
	7/15	R4	2,460	600	4.1
	8/28	K1	11,000	1,000	11.0
	10/21	R1	<u>10,080</u>	<u>3,600</u>	<u>2.8</u>
Catchable subtotal		38,296	13,915	2.8	
Fingerling subtotal		11,000	1,000	11.0	
Soldiers Meadow Res.	4/22	R1	9,600	3,000	3.2
	5/28	R1	5,038	1,625	3.1
	6/13	RB ^a	30,328	446	68.0
	7/3	RB ^b	2,930	118	25.0
	7/17	R1	<u>9,600</u>	<u>3,000</u>	<u>3.2</u>
	Catchable subtotal		24,238	7,625	3.2
Fingerling subtotal		33,258	564	59.0	
Waha Lake 6/5	4/15	R1	9,300	3,000	3.1
		R1	5,100	1,500	3.4
	7/15	R1	10,080	2,400	4.2
	8/29	K1	<u>23,100</u>	<u>2,100</u>	<u>11.0</u>
	Catchable subtotal		24,480	6,900	3.5
Fingerling subtotal		23,100	2,100	11.0	
Manns Lake 6/6	4/17	R1	9,300	3,000	3.1
	5/28	R1	3,115	1,650	3.1
	5/24	LB	427	142	3.0
		LB	440	147	3.0
	6/12	RB ^a	30,030	455	66.0
	7/15	R4	3,690	900	4.1
	7/15	R4	6,960	2,400	2.9
	10/10	LB	<u>145</u>	<u>48</u>	<u>3.0</u>
	Catchable subtotal		23,065	7,950	2.9
	Fingerling subtotal		30,030	455	66.0
	Bass subtotal		1,012	337	3.0

^aCape Cod stock

^bLibby Reservoir stock

Table 1. Continued.

Water	Date stocked	Species stocked	Number stocked	Pounds stocked	Fish per pound
Dworshak Res.	4/1	R1	23,100	7,000	3.3
	4/1	R1	52,650	13,000	4.0
	5/13	R1	26,600	7,000	3.8
	5/14	R1	26,600	7,000	3.8
	5/16	R1	<u>26,885</u>	<u>7,075</u>	<u>3.8</u>
Catchable subtotal			155,835	41,075	3.8
Moose Creek Res.	4/24	R1	6,300	1,800	3.5
	5/14	R1	400	122	3.3
	6/6	R1	5,100	1,500	3.4
	6/24	R1	5,280	1,600	3.3
	8/28	K1	18,700	1,700	11.0
	10/21	R1	<u>5,040</u>	<u>1,800</u>	<u>2.8</u>
Catchable subtotal			22,120	6,822	3.2
Fingerling subtotal			18,700	1,700	11.0
Elk Creek Res.	5/6	R1	10,800	3,000	3.6
	5/16	BA	35	17.5	2.0
	6/24	R1	<u>1,980</u>	<u>600</u>	<u>3.3</u>
Catchable subtotal			12,780	3,600	3.6
Bass subtotal			35	17.5	2.0
Campbells Pond	5/14	R1	165	50	3.3
Robinson Pond	4/24	R1	2,450	700	3.5
	5/13	R1	495	150	3.3
	6/3	R1	495	150	3.3
	6/25	R1	960	300	3.2
	7/20	R1	680	200	3.4
	10/22	R1	<u>1,050</u>	<u>375</u>	<u>2.8</u>
Catchable subtotal			6,130	1,875	3.3
Lewiston Levee Ponds	10/22	R1	1,050	375	2.8
	12/5	K1	<u>1,327</u>	<u>66</u>	<u>20.0</u>
Catchable subtotal			1,050	375	2.8
Fingerling subtotal			1,327	66	20.0
Rainbow catchable grand total			333,239	98,387	3.4
Rainbow fingerling grand total			117,415	5,885	20.0
Largemouth bass grand total			1,012	337	3.0
Smallmouth bass grand total			35	17.5	2.0

Population Sampling

Most of the lowland lakes were sampled either once or twice in 1985 using an electrofishing boat during hours of darkness. Fish samples were collected live, examined and then returned to the water, with the exception of those bass and crappie that were transported to other waters. We also used experimental horizontal gill nets in waters that were not accessible by electrofishing boat. We used several vertical gill nets in Waha Lake to catch kokanee.

Limnological Sampling

An intensive limnological survey was conducted on Winchester Lake in cooperation with the Department of Health and Welfare's Division of Environment. Sampling occurred every two weeks from April through October. The methods are described in the State Water Quality Status Report No. 61 (Moeller 1986).

We also collected some water temperature and dissolved oxygen data on several lakes to compare with data collected in 1984.

FINDINGS

Winchester Reservoir

Department personnel checked a total of 238 anglers at Winchester Reservoir during 1985 (Table 2). Of these, 112 were checked during the ice fishing season and the remaining 126 during the general season. Anglers checked during the ice fishing season had fished a total of 274 hours to catch 161 hatchery rainbow trout (0.6 fish/hr). Anglers checked during the general season fished 262 hours to catch 123 hatchery rainbow and 16 brown bullhead (0.53 fish/hr). Idaho residents made up 98.4% of the anglers checked. Hatchery rainbow trout comprised 94.7% of the fish checked in angler creels, while bullheads contributed 5.3% (Table 3).

On September 12, 1986, we set a horizontal gill net in Winchester Reservoir. The net was fished overnight (18 hours) and pulled at 1000 on September 13. The catch consisted of 10 rainbow trout ranging from 200 to 300 mm and 13 brown bullhead.

Beginning in April 1985, we began an intensive limnological survey of Winchester Lake. The study continued through October 1985 with bi-weekly sampling. The project was done in cooperation with the Idaho Department of Health and Welfare's Division of Environment. The results of the study are reported by Moeller (1986).

The following ABSTRACT is taken from the report.

Table 2. Catch statistics from angler creel checks made on Region 2 lowland lakes and reservoirs, 1985.

Water	Anglers		Hours fished	Total fish caught	Fish per hour
	Res	NR			
Dworshak Res.	157	26	521	361	0.69
Winchester Lake	231	7	536	300	0.56
Spring Valley Res.	253	30	801	651	0.81
Soldiers Meadow Res.	51	7	154	139	0.97
Manns Lake	10	3	36	49	1.36
Moose Creek Res.	90	0	175	300	1.71
Campbells Pond	9	0	30	18	0.60
Blue Lake	0	2	2	7	3.50
Powell Pond	<u>10</u>	<u>9</u>	<u>38</u>	<u>72</u>	<u>1.89</u>
Totals	811	84	2,293	1,897	0.83

Table 3. Species composition of fish checked in anglers' creels on
Region 2 lowland lakes and reservoirs, 1985.

Water	Percent of catch by species							
	HRB	KOK	DV	CT	BK	BC	LB	SB
Dworshak Res.	51.2	43.2	3.6	0.5			0.4	1.1
Winchester Lake	94.7						5.3	
Soldiers Meadow Res.	100.0							
Blue Lake	100.0							
Manns Lake	91.8						8.2	
Campbells Pond	100.0							
Spring Valley Res.	98.3						1.7	
Moose Creek Res.	100.0							
Powell Pond	100.0							

Winchester Lake is an 85 acre recreation site located in North-central Idaho, approximately 30 miles southeast of Lewiston. Complaints by citizens of poor water clarity, odors and decline in angler success led to a six-month study of the lake's water quality in 1985.

Winchester Lake exhibits many symptoms of severe eutrophy. Anaerobic conditions and high temperatures were prevalent throughout much of the water column during summer. No direct correlation was seen between Secchi disk transparency and suspended sediment.

Mean total phosphate concentrations (with 19% as dissolved orthophosphate) in the euphotic zone were six times the recommended limits for reservoirs. The ratio of lake depth to hydraulic retention time was over 10 times the rate considered indicative of eutrophic loading. Phosphorus loading rate by the primary tributary was nearly 2 1/2 times the rate suggested as critical. Influent inorganic nitrogen concentrations were between 2 and 28 times critical values.

The mean chlorophyll *a* concentration was 6 to 12 times that considered representative of eutrophic conditions. Blue-green algae dominated the phytoplankton community in August comprising 82% of the density and 90% of algal biovolume. Species diversity declined from 19 to 10 between mid-July and mid-August.

Neither inorganic metals nor organic compounds (herbicides and pesticides) were found to exceed criteria established for water and fish flesh.

Numerous rehabilitation and management options are feasible for Winchester Lake. The recommended actions should consider ongoing nutrient loading from land activities in the watershed. In addition, the stockpile of nutrients already stored in lake sediments must be addressed.

Spring Valley and Moose Creek Reservoirs

Department personnel interviewed a total of 283 anglers at Spring Valley Reservoir during 1985 (Table 2). Of these, 275 were checked during the ice fishing season and the remaining 8 during the general season. Anglers checked during the ice fishing season had fished a total of 786 hours to catch 636 hatchery rainbow trout (0.81 fish/hr) (Table 3). Anglers checked during the general season fished 15 hours to catch 4 hatchery rainbow trout and 10 largemouth bass (0.93 fish/hr). Idaho residents made up 89.4% of the anglers checked. Hatchery rainbow comprised 98.3% of the fish checked in angler creels.

During the nights of May 23, June 5 and October 9, a total of 1,012 largemouth bass were collected from Spring Valley Reservoir using an electrofishing boat. These fish were transported to Manns Lake and released. The vast majority of these bass ranged from 150 to 200 mm and many likely spawned in Manns Lake during June 1985.

The University of Idaho, in cooperation with the Fish and Game Department, sponsored a graduate student project during 1985 that assessed growth rates of largemouth bass in both Spring Valley and Moose Creek reservoirs. One primary objective was to test differences in bass growth rates between a reservoir without a fish forage base (Spring Valley) and one with a fish forage base (Moose Creek). Bass food habits were also examined and correlated with benthic production in both waters.

Results of the study should provide data on a decision whether to introduce a forage fish to Spring Valley. One major concern is competition between a newly introduced forage fish and the catchable and fingerling rainbow trout. The report should be available in mid-1986.

Soldiers Meadow Reservoir

Department personnel interviewed a total of 58 anglers at Soldiers Meadow Reservoir during 1985 (Table 2). They had fished 154 hours to catch 149 hatchery rainbow trout (1.0 fish/hr). Hatchery rainbow contributed 100% of the catch at Soldiers Meadow (Table 3). Idaho residents comprised 87.9% of anglers checked.

On August 14, 1985, fisheries personnel collected basic water chemistry data at four stations on Soldiers Meadow Reservoir. Surface water temperatures of 17 C were cooler than the 20 C recorded on August 22, 1984. Dissolved oxygen profiles were virtually identical to 1984. Secchi disc readings averaged one meter this year compared to 2.45 m in 1984 (Lindland 1985).

In mid-June 1985, we released 30,000 (68/lb) rainbow fingerlings from the Spokane Hatchery into Soldiers Meadow Reservoir. About 6,000 were adipose fin clipped. Also, in early July we released 3,000 (25/lb) Kootenai River stock rainbow into the reservoir that were reared at the University of Idaho's fish lab. All of those were right ventral clipped.

We plan to monitor their growth rates and contribution to the creel during 1986.

Waha Lake

On May 29, we set four vertical gill nets in Waha Lake. The nets were fished overnight and pulled on the morning of May 30. The total catch consisted of eight kokanee and three hatchery rainbow trout. The late spawning kokanee were in good condition and ranged from 217 to 242 mm. These kokanee originated from a June 24, 1982 release.

On August 14, 1985, we collected basic water chemistry data at four stations on Waha Lake. Readings for temperature, dissolved oxygen and Secchi disc were all very similar to data collected on August 22, 1984 (Lindland 1985).

During the evenings of May 14 and again on October 16, 1985, we used an electrofishing boat on Waha in an attempt to collect smallmouth bass to be stocked into Elk Creek Reservoir. On May 14 we collected a total of 35 smallmouth bass, which were trucked to Elk Creek Reservoir. During the October sampling, surface water temperatures of 13 C had apparently prompted the bass to move to deeper water, as none were collected. Numerous catchable rainbow and Kamloops fingerlings (8/29/85 release) were sampled.

Manns Lake

During the fall of 1984, the Lewiston Orchards Irrigation District drained Manns Lake in order to repair the outlet structure. The period during which the lake was drained offered an excellent opportunity to do some warm water fish habitat improvement work. During January and February 1985, we placed over 700 Christmas trees in clusters at approximately 100 locations on the lake bed. The tree clusters were either weighted down by roping to five-gallon concrete weights or anchored by roping to six-foot steel posts that had been driven flush with the lake bottom. In addition to the cover clusters, we also dumped several truckloads of gravel along the face of the dam in an attempt to enhance spawning habitat for largemouth bass. About six rock reefs were also located around the lake.

We restocked the lake with rainbow trout, largemouth bass and black crappie. Three different stocks of rainbow were released. During April and May, 12,415 unspecified-stock, catchable size (3.1/lb) rainbow were stocked. On June 12, 30,030 Spokane-stock rainbow fingerlings from Spokane Hatchery were released. Approximately 10,000 of these fingerlings were adipose fin clipped. On July 15, 3,300 Mt. Lassen-stock rainbow catchables were released into Manns Lake. None of the catchables were marked. We plan to monitor the growth of the Spokane Hatchery-raised fish during 1986 when they are recruited to the fishery.

Using an electrofishing boat on Spring Valley Reservoir, we collected 1,012 largemouth bass which were transported to Manns Lake and released. Most of these bass were 150 to 200 mm when collected. We attempted to collect black crappie from Moose Creek Reservoir, but were only able to collect about 20. These were released into Manns Lake in May. More black crappie will be released into the lake whenever we can find a good source.

Lewiston Levee Ponds

In late 1985, a study on the Lewiston Levee Ponds was completed by the University of Idaho. The project was funded by the Corps of Engineers. A final report is due in early 1986. Part of that project included a fish management plan for the ponds.

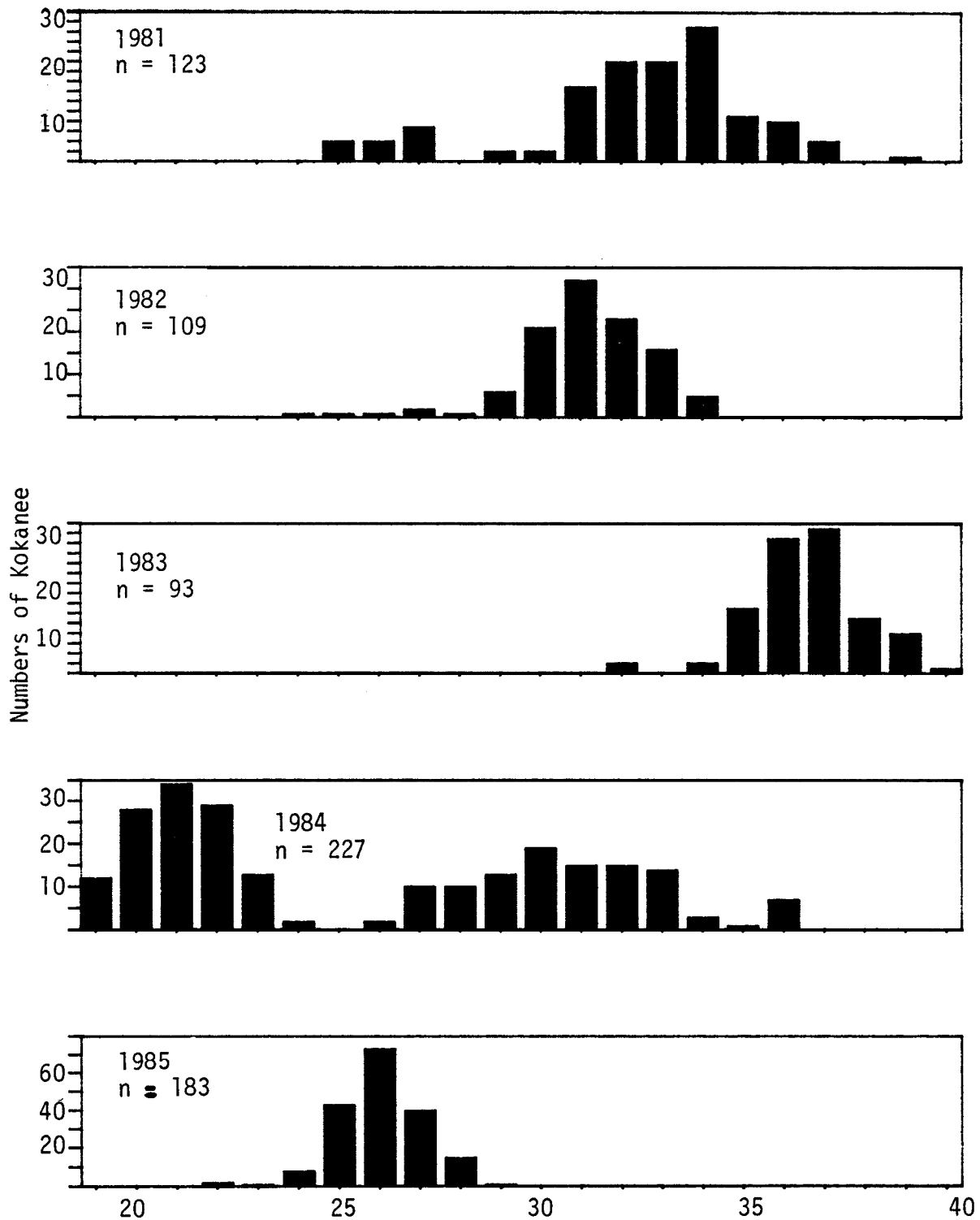


Figure 1. Length-frequencies of kokanee spawners collected from Breakfast Creek from 1981 through 1985.

Several recommendations surfaced in the draft management plan that included keeping the Snake River siphon system going from spring through the fall to reduce nutrient loading to the ponds. Increased nutrients promote algae and aquatic vascular plant growth that requires chemical treatment. Other recommendations included the stocking of Kamloops that could take advantage of the abundant biomass of nongame species. Also, channel catfish were suggested for release.

In December 1985, we released 1,327 Kamloops (20/lb) into the levee ponds. All were adipose fin clipped for future identification. The fish came from the University of Idaho where they were part of a nutritional experiment. They put on excellent growth in the laboratory.

We plan to monitor their growth and contribution to the creel in 1986. Also, we plan to assess the availability of channel catfish for release into the ponds.

Dworshak Reservoir

A total of 183 anglers were checked on Dworshak Reservoir during 1985 (Table 2). They had fished a total of 521 hours to catch 185 hatchery rainbow, 156 kokanee, 13 bull trout, 4 smallmouth bass, 2 cutthroat and 1 brown bullhead (Table 3). The overall catch rate was 0.69 fish/hr. Idaho residents comprised 85.8% of the anglers checked (Table 2).

We have been monitoring kokanee lengths from the Breakfast Creek spawning population since 1981 (Fig. 1). In the winter of 1982, thousands of kokanee were lost through Dworshak Dam during high spill periods. The kokanee population appeared to be reduced in subsequent years relative to fishing success on the reservoir. There also appeared to be a compensatory increase in growth from 1982 to 1983, but by 1984 the modal size declined on the spawning-age fish. There was an unexplained occurrence of age-2+ spawners in the 1984 population (Lindland 1985).

In 1985, we noted a further reduction in the modal size of spawners (Fig. 1). The decline in size for 1984 and 1985 may reflect increases in total population. Winter losses through the dam were less in 1982 compared to 1985. Without available age data for each year, it becomes more speculative as to how mean spawner length relates to population size.

LITERATURE CITED

- Lindland, R.L. 1985. Regional Fishery Management Investigations, Idaho Department of Fish and Game, Job Performance Report, Project F-71-R-9, Job II-B.
- Moeller, J.R. 1986. Winchester Lake Water Quality Status Report No. 61, Idaho Department of Health and Welfare, Division of Environment.

JOB PERFORMANCE REPORT

State of: Idaho

Name: REGIONAL FISHERY
MANAGEMENT INVESTIGATIONS

Project No.: F-71-R-10

Title: Region 2 Stream

Job No.: 2-c Investigations

Period Covered: July 1, 1985 to June 30, 1986

ABSTRACT

Department personnel interviewed a total of 1,200 anglers on 38 different streams in Region 2 during 1985. The average catch rate was 0.58 fish/hr. Seventy-nine percent of the anglers interviewed were Idaho residents.

Regional fisheries personnel selected and snorkeled transects in ten streams within Region 2 during 1985. This was a part of the BPA project to monitor densities of juvenile chinook salmon and steelhead in the Snake and Clearwater river tributaries.

We continued to monitor the success of the brown trout introduction in the Palouse River during 1985. The largest brown trout sampled to date was a 470 mm specimen collected in 1984.

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OBJECTIVES

1. To obtain information on return to the creel of hatchery catchables in rivers and streams in Region 2.
2. To survey the Palouse River drainage for the viability of brown trout populations, habitat and forage suitability for smallmouth bass introductions.
3. To monitor juvenile salmon and steelhead densities in selected drainages within the region.

RECOMMENDATIONS

1. Stocking rates of catchable trout needs to be evaluated in all Region 2 rivers and streams so that:
 - a. objectives of the fish plan are met,
 - b. return to the creel of catchables is optimized, and
 - c. the program is cost effective.
2. A more intensive evaluation of stocking brown trout into the Palouse River is needed. Releases should be marked so that individual year classes can be traced by electrofishing. Effort should be made to locate spawning fish.
3. Smallmouth bass should be released into the Palouse River below Laird Park. Although habitat may be marginal, an abundant forage base should support a smallmouth population. An evaluation should follow.
4. Continue testing the Oak Springs rainbow in the Snake River and begin testing it in the Salmon River.
5. Begin tagging smallmouth bass in the Snake River from Lewiston to Hells Canyon Dam to assess exploitation. Use of reward tags should help the returns. An assessment of population status is needed for recommending the 12-inch minimum size limit.

TECHNIQUES USED

Random creel checks were conducted on Region 2 streams by conservation officers. Information collected included angler residency, hours fished, number of fish caught and species composition of the catch.

We used electrofishing gear to collect fish samples from the Palouse River drainage. Spot areas were sampled from Potlatch to Poorman Creek including several tributaries.

Numerous tributary streams within the region were selected for monitoring juvenile salmon and steelhead. Transects were snorkeled and measured to make estimates of juvenile salmonid density in fish/100 m². The transects were established as permanent stations for repeatability in future years.

FINDINGS

Regional Stream Creel Census

Over 50,000 rainbow catchables were released into streams of Region 2 in 1985. The lower Salmon River received 100,000 subcatchable Kamloops. Also, 15,000 brown trout fingerlings were stocked in the Palouse River (Table 1).

Department personnel interviewed anglers on 38 different streams in Region 2 during 1985. A total of 1,200 anglers were interviewed. They had fished 2,948 hours to harvest 1,718 fish for an overall catch rate of 0.58 fish/hr (Table 2). Seventy-nine percent of the anglers interviewed on Region 2 streams during 1985 were Idaho residents. Catch rates ranged from 0.009 fish/hr on the Salmon River to 1.56 fish/hr on the Lochsa River.

Table 3 provides a summary of species composition of fish checked in Region 2 streams during 1985. Wild rainbow trout (steelhead) comprised a majority of the catch on 13 of the 33 streams where fish were checked. Cutthroat were most important in eight streams, hatchery rainbow in five, brook trout and adult steelhead in two each and bull trout and whitefish in one each.

Palouse River

The Palouse River has been stocked annually with brown trout fingerlings since 1979. Number stocked has ranged from a high of 71,185 in 1980 to a low of 15,000 in 1985. Size at stocking has varied from as small as 333/lb to as large as 16/lb (Table 4).

We used electrofishing gear to obtain samples of brown trout from the Palouse during each of the past three years. Table 5 summarizes numbers of brown trout collected, size ranges and mean sizes for each year. The largest brown trout collected to date has been a 470 mm specimen sampled in 1984. Since none of the fish have been marked at release, it is not possible to accurately separate year-classes.

Snake River

During June and July 1985, 80,000 rainbow fingerlings from the Oak Springs Fish Hatchery along the Deschutes River in Oregon were released into the Snake River. One group of 40,000 was released at Hells Canyon Dam, another 40,000 group was released at Pittsburg Landing. They

Table 1. Summary of hatchery trout releases into Region 2 streams, 1985.

Water	Date stocked	Species stocked	Number stocked	Pounds stocked	Fish per pound
Clearwater River	7/25	R1	1,360	400	3.4
Potlatch Cr.	5/15	R1	330	100	3.3
	5/24	R1	1,085	350	3.1
E. Fk. Potlatch	6/5	R1	1,150	350	3.3
Orofino Cr.	5/15	R1	165	50	3.3
Quartz Cr.	6/6	R1	660	200	3.3
Rhodes Cr.	6/6	R1	825	250	3.3
Lolo Cr.	6/17	R1	960	300	3.2
Eldorado Cr.	6/17	R1	960	300	3.2
Lawyers Cr.	5/16	R1	990	300	3.3
Middle Fk. Clearwater	6/18	R1	2,890	850	3.4
Clear Cr.	6/18	R1	465	150	3.1
S. Fk. Clearwater	6/18	R1	1,600	500	3.2
	6/19	R1	640	200	3.2
	6/21	R1	480	150	3.2
Newsome Cr.	5/22	R1	1,500	500	3.0
	6/19	R1	960	300	3.2
Crooked River	5/22	R1	1,550	500	3.1
	6/19	R1	960	300	3.2
Red River	5/21	R1	2,325	750	3.1
	6/7	R1	2,395	725	3.3
	6/21	R1	1,450	450	3.2
S. Fk. Red River	6/7	R1	330	100	3.3
	6/21	R1	<u>640</u>	<u>200</u>	<u>3.2</u>
Subtotal	for S. Fk. Clearwater only		14,830	4,675	3.2
Selway	6/4	R1	2,155	650	3.3
	7/11	R1	2,050	500	4.1
	7/12	R1	2,460	600	4.1
	7/16	R1	1,230	300	4.1
	7/22	R1	<u>2,890</u>	<u>850</u>	<u>3.4</u>
Subtotal			10,785	2,900	3.7
Lochsa River	5/23	R1	930	300	3.1
	6/9	R1	972	300	3.3
	7/10	R1	2,870	700	4.1
	7/15	R1	2,460	600	4.1
	7/21	R1	<u>2,380</u>	<u>700</u>	<u>3.4</u>
Subtotal			9,612	2,600	3.7

Table 1. Continued.

Water	Date stocked	Species stocked	Number stocked	Pounds stocked	Fish per pound
Palouse River	6/3	BN	15,000	45	333.0
	6/5	R1	2,150	650	3.3
Salmon River	8/15	KM	44,880	5,100	8.8
	8/16	KM	55,900	4,300	13.0
Slate Cr.	6/5	R1	1,000	305	3.3
	8/16	R1	1,000	250	4.0
Skookumchuck	6/5	R1	1,000	305	3.3
Rainbow catchable Grand Total			52,217	15,285	3.4
Kamloops fingerling Grand Total			100,780	9,400	10.7
Brown trout fry Grand Total			15,000	45	333.0

Table 2. Catch statistics for fish species checked from anglers' creels on Region 2 streams, 1985.

Water	Anglers		Hours fished	Total fish caught	Fish per hour
	Res.	NR			
South Fork Clearwater	104	27	234	149	0.64
Red River	49	10	38	86	2.26
Newsome Cr.	62	4	94	96	1.02
Crooked River	13	1	13	12	0.92
Mill Cr.	2	0	3	5	1.67
Ten Mile Cr.	<u>3</u>	<u>0</u>	<u>2</u>	<u>1</u>	<u>0.50</u>
Subtotal	233	42	384	349	0.91
Selway River	16	9	52	37	0.71
Indian Cr.	<u>2</u>	<u>2</u>	<u>2</u>	<u>10</u>	<u>5.00</u>
Subtotal	18	11	54	47	0.92
Lochsa River	61	43	238	307	1.29
Fish Cr.	9	0	16	47	2.94
Brushy Fork Cr.	3	0	6	26	4.33
White Sand Cr.	2	4	4	6	1.50
Crooked Fork Cr.	<u>5</u>	<u>0</u>	<u>22</u>	<u>61</u>	<u>2.77</u>
Subtotal	80	47	286	447	1.56
Middle Fork Clearwater	0	3	3	0	0.00
Subtotal	0	3	3	0	0.00
North Fork Clearwater	184	15	283	334	1.18
Orogrande Cr.	9	3	15	23	1.53
Skull Cr.	5	0	12	18	1.50
Beaver Cr.	10	3	23	20	0.87
Quartz Cr.	9	0	6	1	0.17
Fourth of July Cr.	2	0	1	0	0.00
Scofield Cr.	2	0	4	16	4.00
Cold Springs Cr.	2	0	1	3	3.00
Kelly Cr.	7	7	37	78	2.11
Lake Cr.	0	1	1	1	1.00
Below Dworshak Dam	<u>5</u>	<u>0</u>	<u>5</u>	<u>13</u>	<u>2.60</u>
Subtotal	235	29	388	507	1.31

Table 2. Continued.

Water	Anglers		Hours fished	Total fish caught	Fish per hour
	Res.	NR			
Clearwater River	10	1	70	11	0.16
Orofino Cr.	2	0	1	0	0.00
Rhodes Cr.	9	0	3	7	2.33
Lawyers Cr.	8	0	9	3	0.33
Whiskey Cr.	6	0	2	3	1.50
Lolo Cr.	<u>10</u>	<u>0</u>	<u>10</u>	<u>25</u>	<u>2.50</u>
Subtotal	45	1	95	49	0.52
Salmon River					
Mouth of Whitebird Cr.	163	28	1,056	84	0.08
Rapid River	3	0	3	2	0.66
Graves Cr.	9	0	8	11	1.38
Cold Springs Cr.	<u>2</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>0.00</u>
Subtotal	177	28	1,071	97	0.09
Snake River	<u>155</u>	<u>91</u>	<u>657</u>	<u>205</u>	<u>0.31</u>
Subtotal	155	91	657	205	0.31
Totals	948	252	2,948	1,718	0.58

Table 3. Species composition of fish checked in anglers' creels on Region
2 streams, 1985.

Water	Percent of fish by									
	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BC
South Fork		77.8	2.7	4.7	0.7		14.1			
Red River		83.7		5.8		9.3				
Newsome Cr.		6.9		3.1						
Crooked River		83.3					8.4	8.3		
Mill Cr.		60.0		40.0						
Ten Mile Cr.	100.0									
Meadow Cr.	100.0									
Selway River	16.3	27.0		56.7						
Indian Cr.				100.0						
Lochsa River	35.5			65.5						
Fish Cr.	95.7			4.3						
Brushy Fork Cr.	92.3			7.7						
White Sand Cr.	66.7			16.7			16.6			
Crooked Fork Cr.	41.0			57.4		1.6				
North Fork										
Clearwater	13.8			21.3		0.8	64.1			
Orogrande Cr.	52.2			30.4	17.4					
Skull Cr.	94.4			5.6						
Beaver Cr.	90.0			10.0						
Quartz Cr.				100.0						
Scofield Cr.					100.0					
Cold Springs Cr.	33.3			67.3						
Kelly Cr.				100.0						
Lake Cr.				100.0						
Below Dworshak Res.		100.0								
Clearwater River										
Orofino-Kooskia	45.5		54.5							
Rhodes Cr.		100.0								
Lawyers Cr.		100.0								
Whiskey Cr.					100.0					
Lolo Cr.	100.0									
Salmon River										
Mouth to Whitebird	1.1	23.9	67.0				8.0			
Rapid River						100.0				
Graves Cr.	90.9							9.1		
Snake River		51.7		17.6					30.2	0.

Table 4. Summary of brown trout releases into the Palouse River, 1979 to 1985.

Date stocked	Number stocked	Pounds stocked	Fish per pound
6/3/85	15,000	45	333.3
9/19/84	15,400	88	175.0
10/3/83	14,465	550	26.3
10/23/83	15,280	850	18.0
6/8/82	27,625	425	65.0
3/27/81	4,200	120	35.0
4/10/81	14,420	515	28.0
5/28/80	14,080	110	128.0
5/28/90	37,200	400	93.0
9/19/80	20,905	113	185.0
6/22/79	25,200	1,200	21.0
7/16/79	4,400	275	16.0

Table 5. Summary of brown trout collected from the Palouse River by electrofishing, 1983, 1984 and 1985.

Section		9/14/83	9/7/84	9/11/85
0.5 mile east of Harvard	Number	0	ND	0
	Size range (mm)		ND	
	Mean size (mm)		ND	
Near mouth of Big Cr.	Number	ND	7	0
	Size range (mm)	ND	(155-470)	
	Mean size (mm)	ND	222	
Big Sand Cr. to strychnine Cr.	Number	0	8	8
	Size range (mm)		(140-194)	(112-175)
	Mean size (mm)		173	136
North Fork to Poorman Cr.	Number	2	ND	1
	Size range (mm)	(205-310)	ND	-
	Mean size (mm)	258	ND	125

averaged 100 to 125 mm in length. About 8,000 fish from each release were marked. The Hells Canyon group were left pelvic clipped and the Pittsburg fish were right pelvic clipped. The Oak Springs fish can be distinguished from hatchery steelhead by retention of their adipose fin.

The Oregon Department of Fish and wildlife has traditionally released upwards of 60,000 Oak Springs rainbow fingerlings at Hells Canyon Dam. Subsequent creel data suggested that those releases produced excellent fishing for rainbow that attained 500 mm in length. We have traditionally released upwards of 100,000 rainbow fingerlings of generic stock at Pittsburg Landing. Trout fishing below Pittsburg has never been considered as good as above the landing. The differentially marked release groups, if recovered in sufficient numbers, should allow for comparisons of growth and return to the creel from both reaches of river.

Oregon has tested growth of the Oak Springs stock in the Grande Ronde River. Growth was very good (1st year - 300 mm; 2nd year - 400 mm; 3rd year - 530 mm). This stock has excellent performance within large river environments and should be considered for a possible brood stock.

In recent years, nitrogen supersaturation produced by high winter and spring spill rates in the Hells Canyon complex of dams has impacted trout populations in the Snake River. Dissolved gas monitoring stations need to be established from Brownlee Dam to the Salmon River to document nitrogen levels. This data then needs to be applied to correcting the problem through dam modification or changes in spill regimes.

Juvenile Salmon and Steelhead Density

Region 2 fisheries management personnel spent considerable time during the field season of 1985 establishing and snorkeling transects in selected streams in order to monitor densities of Juvenile chinook salmon and steelhead. Streams snorkeled by Region 2 personnel during 1985 were: Captain John Creek, Wolf Creek, Sheep Creek, Granite Creek (Snake River); Big Canyon Creek (main stem Clearwater); Tenmile Creek and Newsome Creek (South Fork Clearwater); Moose Creek, Running Creek and White Cap Creek (Selway). Table 6 summarizes densities of Juvenile steelhead and chinook counted in these streams.

Table 6. Densities of juvenile salmon and steelhead in selected Region 2 streams, 1985.

Stream	Transect location	Number/100m ¹ Rainbow-Steel head				Chinook	
		0	I	II	>III	0	I
Capt. John Creek	From 100m (110 yds) downstream up to gauge stn.	5.0	6.9	2.8	0.3	0	0.0
	0.9 mi upstream from Madden Cr.	11.7	10.6	5.0	0.0	0	0.0
Wolf Creek	From old road crossing upstream 95m (104 yds)	34.8	9.6	7.9	1.5	0	0.0
Sheep Creek	From bridge upstream 45.7mm (50 yds)	13.9	5.7	15.6	3.3	0	0.0
	From 91.4mm (100 yds) downstream up to gate	3.6	3.8	2.8	0.4	0	0.0
Granite Creek	From base of cliff upstream 45.7m (50 yds)	10.5	14.0	2.2	0.0	0	0.0
	From bridge upstream 45.7mm (50 yds)	6.1	15.3	3.5	0.0	0	0.0
	From mouth of Little Granite Cr. upstream 9.14mm (100 yds)	7.5	6.5	6.0	1.5	0	0.0
Big Canyon Creek	From Little Canyon Creek upstream 110mm (121 yds)	0.0	6.7	0.3	0.6	0	0.6
Tenmile Creek	From bridge upstream 80mm (87 yds)	6.1	1.7	4.4	0.2	0	0.0
Newsome Creek	From Beaver Creek upstream 70mm (77 yds)	83.8	5.0	5.0	0.8	0	0.0
Moose Creek	From Pack Bridge at mouth upstream 114mm (125 yds)	1.6	0.1	0.0	0.0	0	0.0

Table 6. Continued.

Stream	Transect location	Number/100m ²					
		Rainbow-Steelhead				Chinook	
		0	I	II	>III	0	I
Moose Creek	In N.Fk. from mouth upstream 114m (125 yds)	1.6	0.1	0.0	0.0	0	0.0
Running Creek	From mouth upstream 114m (125 yds)	2.8	0.7	0.0	0.2	0	0.9
	From Eagle Creek up- stream 91.4m (100 yds) 2.5		1.6	0.3	0.0	0	0.0
White Cap Creek	From bridge at mouth upstream 85m (93 yds)	1.1	0.0	1.1	0.0	0	0.0
	From trail head sign upstream 134m (147 yds)	0.0	0.1	0.6	0.0	0.8	0.1

JOB PERFORMANCE REPORT

State of: Idaho

Name: REGIONAL FISHERY MANAGEMENT
INVESTIGATIONS

Project No ___ E-71-R-10 ___

Job No. 2-d

Title: Region 2 Technical Guidance.

Period Covered: July 1, 1985 to June 30, 1986

ABSTRACT

During 1985 Region 2 fishery management personnel provided private individuals, organizations, state and federal agencies with written technical guidance and advice on projects associated with, or having impacts on, the fishery resources or aquatic habitats in Region 2. Written comments were submitted on a total of 110 documents. In addition, farm pond owners were assisted in selecting and obtaining fish to be stocked into their ponds.

Author:

Ronald L. Lindland
Regional Fishery Biologist

OBJECTIVES

1. To provide technical guidance to public agencies and private individuals regarding stream alterations, timber sales, road construction, small hydroelectric projects, private pond operations or any other matters pertaining to fisheries in Region 2.
2. To assist local sportsmens' groups and individuals with habitat improvement projects which will benefit fisheries.

RECOMMENDATIONS

1. we recommend continuance of the technical guidance program to ensure professional and timely input regarding projects and programs which affect fisheries within Region 2.

TECHNIQUES USED

Through personal contact, project review, document review and field inspections, we made comments and provided advice on projects or activities associated with or impacting the fishery resource or aquatic habitat of Region 2.

FINDINGS

During 1985, Region 2 fishery management personnel submitted written comments on 110 documents from 8 different state and federal agencies. Table 1 categorizes these comments by agency. These documents comprised 15% of the 751 agencies that received comment statewide.

Table 1. Summary of documents receiving written comment from Region 2 fishery management, 1985.

Agency	Number of documents
U.S. Bureau of Land Management	8
U.S. Corps of Engineers	9
U.S. Forest Service	19
U.S. Bureau of Reclamation	1
U.S. Environmental Protection Agency	6
Idaho Department of Lands	9
Idaho Department of Transportation	11
Idaho Department of Water Resources	31
Miscellaneous	16
Total:	110

A P P E N D I C E S

Appendix A. Creel census summaries for lakes and reservoirs, Region 2, 1985.

CREEL CENSUS SUMMARY
Fishery Management, Region 2, 1985

Water	Month	Res	NR	Fish Caught_									Hrs	F/H	F/A
				HRB	KOK	CT	BK	DV	BC	BCR	SB	LB			
LAKES AND RESERVOIRS															
Dworshak Reservoir	Jan.	3	0	14									12	1.16	4.60
	Feb.	12		13									40	0.33	1.10
	March	26		13									69	0.45	1.10
	April	20	3	32			1						74	0.45	1.65
	May	51	12	36	29	2		12	1	4			168	0.48	1.30
	Aug.	45	8	59	127								158	0.8	3.60
Winchester Lake	Jan.	108		160									272	0.6	3.00
	Feb.	4		1									2	0.5	0.25
	April	26		18									28	0.6	0.70
	May	25		30									50	0.6	1.20
	June	37	7	65				16					152	0.5	2.00
	July	31		10									32	0.3	0.30
Soldiers Meadow	April	22		68									60	1.1	3.10
	June	15		29									46	0.6	2.00
	Aug.	2	7	16									16	1.0	2.0
	Oct.	12		43									27	1.6	3.60
Blue Lake	Aug.		2	7									2	3.5	3.50
Waha Lake	April	4											4	0.0	0.00
Manns Lake	June	1	3	11								4	8	1.9	3.75
	Aug.	9		34									28	1.2	3.70
Campbells Pond	May	9		18									30	0.6	2.00
Spring valley	Jan.	234	25	605								1	726	0.8	2.30
	Feb.	16		31									60	0.8	2.30
	Aug.	3	5	4								10	15	1.0	1.80
Moose Cr. Res. R9R2DJRLL	April	90		300									175	1.7	3.30

Appendix A. Continued.

CREEL CENSUS SUMMARY
Fishery Management, Region 2, 1985

Water	Month	Res	NR	Fish Caught									Hrs	F/H	F/A
				HRB	KOK	CT	BK	DV	BC	BCR	SB	LB			
LAKES AND RESERVOIRS															
Dworshak Reservoir	Jan.	3		14									12	1.16	4.60
	Feb.	13		13									40	0.33	1.10
	March	26	3	31									69	0.45	1.10
	April	20	3	32				1					74	0.45	1.65
	May	51	12	36	29	2		12	1	4			168	0.48	1.30
	Aug.	45	8	59	127								158	0.80	3.60
Winchester Lake	Jan.	108		160									272	0.60	3.00
	Feb.	4		1									2	0.50	0.25
	April	26			18								28	0.60	0.70
	May	25		30									50	0.60	1.20
	June	37	7	65				16					152	0.50	2.00
	July	31		10									32	0.30	0.30
Soldiers Meadow	April	22		68									60	1.10	3.10
	June	15		29									46	0.60	2.00
	Aug.	2	7	16									16	1.00	2.00
	Oct.	12		43									27	1.60	3.60
Blue Lake	Aug.		2	7									2	3.50	3.50
Waha Lake	April	4											4	0.00	0.00
Manns Lake	June	1	3	11							4		8	1.90	3.75
	Aug.	9		34									28	1.20	3.70
Campbells Pond	May	9		18									30	0.60	2.00
Spring Valley	Jan.	234	25		605							1	726	0.80	2.30
	Feb.	16		31									60	0.50	1.90
	Aug.	3	5	4								10	15	1.00	1.80
Moose Creek Res.	April	90		300									175	1.7	3.3
R9R2DJRLL															

R9R2DJRLL

Appendix B. Creel census summary for rivers and streams, Region 2, 1985.

CREEL CENSUS SUMMARY
Fishery Management Region 2, 1985

Water F/H F/A	Month	Res	NR	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BCR	Hrs
RIVERS AND STREAMS														
39	<u>South Fork Clearwater</u>	Feb.	4							1				5 0.2 0.25
		March	27		1		4(adult)				20			68 0.4 1.00
		May	9		1	1	1						4	0.5 0.20
		June	21	1		18		1						60 0.3 0.90
		July	39	26		85	6							92 1.0 1.40
		Aug.	4			11								6 0.0 0.00
	Red River	May	9	3		4			5					11 0.9 0.75
		June	29	6		52	4		3					19 3.2 1.70
		July	5	1		9								6 1.6 1.50
		Aug.	6			7	1			1				3 3.0 1.50
	Newsome Cr.	May	29	1		42								44 1.0 1.40
		June	4			6								5 1.2 1.50
		July	29	3		45	3							45 1.1 1.4
	Crooked River	May	13	1		10			1	1				13 1.0 0.90
	Mill Cr.	June	2			3	2							3 1.6 2.50
	Ten Mile Cr.	May	3		1									2 0.6 0.30
	Meadow Cr.	May	5		10									10 1.0 2.00
	<u>Selway River</u>	June	7	3		4	17							20 1.0 2.00
	Mouth to falls (C-K)	July	9	5		6	4							29 0.3 0.70
	Falls upstream (C-R)	July		1	6		3							3 3.0 9.00
	Indian Cr.	July	2	2			10							2 6.7 2.50

Appendix B. Continued.
CREEL CENSUS SUMMARY
Fishery Management Region 2, 1985

Water	Month	Res	NR	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BCR	Hrs	F/H	F/A
<u>RIVERS AND STREAMS (Cont.)</u>																
<u>Lochsa River</u>	July	1	1											1	0.0	0.00
Mouth to wilderness Gateway (C-K)	Aug.	2	15				1							8	0.1	0.06
Wilderness Gateway	May	9	4											41	0.0	0.00
Bridge to Crooked Fk. Cr. (C-R)	June	16		7			3							34	0.3	0.60
	July	19	13	86			147							100	2.3	7.30
	Aug.	14	10	16			47							54	1.2	2.60
Fish Cr.	Aug.	9		45			2							16	3.0	5.20
Brushy Fk. Cr.	July	3		24			2							6	4.3	3.60
White Sands Cr.	July	2	4	4			1			1				4	1.0	1.00
Crooked Fork Cr.	July	5		25			35		1					22	2.7	12.2 n
<u>Middle Fk. Clearwater</u>	July		2											1.5	0.0	0.00
	Aug.		1											1	0.0	0.00
<u>North Fork Clearwater</u> (Above Dworshak Res.)	April	35					15			177				55	3.5	5.50
	May	39					9		1	25				45	0.7	0.90
	June	31	8	9			11			1				49	0.4	0.5
	July	20		5			12							28	0.6	0.90
	Aug.	35	6	20			13		1	1				65	0.5	0.9
	Sept.	24	1	12			11		1	10				41	0.8	1.40
Orogrande Cr.	June	5		3			4	3						4.5	2.2	2.00
	July		2				1							1	2.2	2.00
	Aug.	4	1	9			2	1						9	1.3	2.40

Appendix B. Continued.
CREEL CENSUS SUMMARY
Fishery Management, Region 2, 1985

Water	Month	Res	NR	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BCR	Hrs	F/H	F/A
RIVERS AND STREAMS (Cont.)																
41	Skull Cr.	May	1	3										1	3.0	3.00
		Aug.	4	14			1							11		1.4
		3.8														
	Beaver Cr.	May	3				1							23	0.04	0.3
		Aug.	7	3	18		1									
	Quartz Cr.	May	1											0.5	0.0	0.00
		June	8				1							5.5	0.2	0.1
	4th of July Cr.	July	2											1	0.0	0.00
	Scofield Cr.	Aug.	2					16						4	4.0	8.0
	Cold springs Cr.	Sept.	2		1		2							1	3.0	1.5
	Kelly Cr.	June	4	2										0	0.0	0.00
		Aug.	3	5			78							37	2.1	9.8
	Lake Cr.	Aug.		1			1							1	1.0	1.00
	Below Dworshak Res.	Aug.	5			13								5	26.0	26.00

Appendix B. Continued.
CREEL CENSUS SUMMARY
Fishery Management, Region 2, 1985

Water	Month	Res	NR	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BCR	Hrs	F/H	F/A
RIVERS AND STREAMS (Cont.)																
<u>Clearwater River</u>																
Orofino--Kooskia	Feb.	9					6 (adult)							68	0.1	0.7
	Sept.	1	1	5										2	2.5	2.5
Orofino Cr.	June	2												1	0.0	0.0
Rhodes Cr.	June	9			7									3	2.3	0.8
Lawyers Cr.	April	6			2									8	0.3	0.3
	June	2			1									1	1.0	0.5
Whiskey Cr.	May	6						3						2	1.5	0.5
Lolo Cr.	Aug.	10		25										10.	.5	2.5
<u>Salmon River</u>																
Mouth to Whitebird (Section 1)	Feb.	3												3	0.0	0.0
	March	26					5 (adult)							123	0.04	0.2
	April	8			13									20	0.7	1.60
	June	4			2									18	0.1	0.5
	July	5	4		6						7			30	0.4	1.40
	Sept.	23				8 (adult)								100	0.1	0.3
	Oct.	50	14			34 (adult)								533	0.1	0.5
	Nov.	40	10			12 (adult)								228	0.1	0.2
	Dec.	4		1										1	1.0	0.3
																0
Rapid River	May	3							2					3	0.7	0.7
Graves Cr.	April	6		8										2	4.5	1.5
	May	3	1								1			6	0.3	0.7
Cold Springs Cr.	June	2												4	0.0	0.0

Appendix B. Continued.
 CREEL CENSUS SUMMARY
 Fishery Management, Region 2, 1985

Water	Month	Res	NR	WRB	HRB	SH	CT	BK	DV	WF	SB	CC	BCR	Hrs	F/H	F/A
RIVERS AND STREAMS (Cont.)																
<u>Snake River</u>	March	5												15	0.0	0.0
	May	8									10			4	2.5	1.3
	June	10			37									37	1.0	3.70
	July	40	6		34					12				107	0.4	1.0
	Aug.	27	33		33					31			1	91	0.7	1.10
	Sept.	40	37		2	8 (adult)				9				169	0.1	0.2
	Oct.	10	10			24 (adult)								202	0.1	1.20
	Dec.	15	55			4 (adult)								32		

Submitted by:

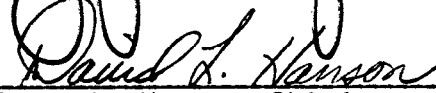
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